16.	Empire oiled (varnished) silk, ·003 to ·008	10 sheets
17.	Cotton tubing	1 gr. yd.
18.	Soldering paste	5 lbs.
19.	Soldering lead	10 ,,
20.	Concentrated sulphuric acid	25 ,,
21.	Double silk covered copper wires, 16 to 20, 22 to 26 and 30 to 34 S. W. G.	2 lbs. each
22.	Double cotton covered copper wires, 6, 8, 10, 12, 14, 16, 19, 23, 26, 27, 38, S.W.G.	2 ,, ,,
23.	Single cotton covered 19 to 23, 25, 26, 30, 32, 34, 38 ...	1 ,, ,,
24.	Enamelled Insulated copper wires, 14, 18, 21 to 27, 30 to 37...	1 ,, ,,
25.	Nichrome resistance wire No. 25 and 30 S.W.G. ...	1 ,, ,,
26.	"Lohys" Transformer, Field and Armature laminations ...	100 ,,
27.	Commutator copper segments suitable for the construction of motors with the above laminations	15 ,,
28.	Table or bracket 12" fan, oscillating, for 220 volts, 60 cycles, A. C. supply for laboratory use	2

Yours faithfully,
M. S. RAMCHENDRA RAO,
Secretary,
Stores Purchase Committee.

BANGALORE BUILDINGS DIVISION, BANGALORE.

Notification dated 12th August 1933.

Notice is hereby given that sealed tenders will be received at the Office of the Executive Engineer, Bangalore Buildings Division, Bangalore, up to 6th September 1933 (2 P.M.) for Construction of a Building for the Technological Institute, Bangalore. An approximate estimate of quantities is given below. These quantities are not guaranteed. The work should be completed by the end of December 1935.

The plans, detailed estimate and conditions may be seen at the Executive Engineer's Office, Buildings Division, Bangalore, between the hours of 11 A.M. and 5 P.M. on working days.

3. Tenders should be submitted on printed forms, which may be obtained from the Executive Engineer. The tenders should be accompanied by a statement in the form given below, showing the rates at which the different items specified will be executed both in words and figures.

4. Each tender must be accompanied by a deposit of rupees ten thousand only in cash or Government Promissory Notes, as earnest money and be superscribed "Tender for Constructing a Building for the Technological Institute, Bangalore" in default of which, tenders will be rejected.

5. The final acceptance of any tender, will rest with the Chief Engineer who does not bind himself to accept the lowest or any tender or to assign any reason whatever for the rejection of any tender.

6. Within eight days of the acceptance of the tender, the successful competitor will be required to execute the usual contract bond, in default of which, his tender will be considered cancelled, and his earnest money will be forfeited.

7. The name of the successful competitor whose tender has been accepted, will be posted on the Notice Board in the Executive Engineer's Office in due course. No enquiries regarding the acceptance or rejection of a tender will receive any reply.

8. On acceptance of one of the tenders, the earnest money on rejected tenders will be returned. ... ...

9. Percentage rates above or below the estimate rates will not be accepted.

10. No claims for enhanced rates will be entertained on any account after acceptance of tenders. The monthly rate of progress shall be Rupees ten thousand.

12. The contractor will be dealt with in terms of the bond for any short progress or delay. In matters of all disputes about rates, measurements, quality of work, etc., the decision of Chief Engineer will be final and legally binding over the contractors.

Abstract of estimated quantities for Constructing the Technological Building in Bangalore City.

No.	Items of work	Per	Quantity
	BASEMENT FLOOR.		
1	Earthwork excavating foundations and filling in basement including consolidation, with extra earth where necessary.	C.yd.	2,112
2	Filling in foundation with broken stone concrete 1 : 1 : 1 : 4 in surki mortar machine ground in (4) layers well consolidated.	C.ft.	19,153
3	Burnt size stone in surki mortar (machine ground) in courses not less than 8" high including bond stones 6' apart in foundation and basement.	,,	28,467
4	Burnt stone slabs not less than 5" thick set in surki mortar machine ground over the outer exposed portions of the basement, and for steps including 2 line dresssing for the exposed surfaces.	Sq.ft.	2,083
5	Burnt stone slabs not less than 5" thick one line dressed for sills and lintels of windows, and for basement of interior walls including one line dressing for bed joints.	,,	2,399
6	Two line dressing for skerting course of masonry 8" high 1½" projection alround the building over plinth slab.	R.ft.	686
7	Burnt size stones in lime mortar 1 : 2 (machine ground) mixed with 10% cement in courses of about 6" with through bond stones 6' apart with neat clear joints and one line dressing for all stones on exposed or unplastered face and 1½" dressing, two lines at quoins outside with central bushwork not projecting over an inch for superstructure.	C.ft.	26,091
7a	Cut stone arch work with necessary dressing and with stepped voussoirs as per drawing.	,,	1,401
8	Pointing stone masonry walls, with white Portland cement (Atlas or any other brand) including scraping the joints ½" to 1" deep and nicely lined.	Sqr.	156·4
9	Chunam plastering over stone masonry with two coats and rendered smooth.	,,	74·05
10	White washing two coats	,,	74·05
11	Cut stone work 9" high 1½' wide with two line dressing on the face for the middle layer of the string course at the level of the roof.	C.ft.	515
12	Cut stone string course at the level of the roof in 3 layers-bottom layer 5" dressed slab 18" wide 3" projection beyond the wall central layer-cut stone work 9" thick and 18" wide (*vide* item 11) 6" projection beyond the wall and top layer 4" dressed slab, 19" wide 4" projection beyond the wall (rate is for top and bottom layer only).	R,ft.	686
13	Two line dressing all round doors and windows 7" wide and 1" projection beyond the face of the wall.	,,	1,508
14	R. S. beams as per B. S. S. including lifting and hoisting and railway freight with one coat of red lead before hoisting and boxing with cement concrete 1 : 2½ : 5 and wirenet, the top six inches of the girder being buried in the floor *i.e.*, the top of the girder is to be kept 2" below the top of finished floor.	Cwt.	343·55
15	Roofing with reinforced solid or hollow bricks to carry 1½ cwts. per square foot super load 12¾ feet span resting on concrete haunches of the main girders and with two inches thick flooring in cement concrete 1 : 2½ : 5 finished at top, with white and red coloured cement ⅛" thick in patterns for borders for about ⅓ the whole area and with smooth lime plaster mixed with 10% for ceiling.	Sqr.	92·60
16	Flooring with 3" thick granite slabs top three line dressed laid diagonally over a bed of 3' concrete and cement pointing neatly.	,,	85·64

No.	Item of work	Per	Quantity
17	Flooring with milk white glazed tiles on 3" concrete bed and pointing with cement and plaster of paris.	Sqr.	0·84
18	Reinforced cement concrete spandrel stairs with steps of 12" tread 6" rise 4 3/16 feet wide and 2' into the wall with smooth non-wearing top finish (with ironite or lopido lith).	Sq.ft.	365
19	Cast iron railings 3' high ornamental as per design including polished teakwood hand railing 4" x 3" with painting and fixing, etc., complete iron work from Bhadravathi.	R.ft.	44
20	Partition wall with R. C. bricks with composition mortar 4½" thick having Xmet reinforcement in every alternate course with ¼ cement with plastering, etc., complete.	S.ft.	259
21	Teakwood windows with 3" x 5" frame work 1¼" thick shutters glazed in (4) halves with ⅛" thick rolled glass and rebated both sides including brass hinges, brass hooks, rings and stoppages, etc, including slate colour silicate painting complete two coats.	,,	1,232
22	Teakwood doors with 3" x 5" frame work 1½" thick shutters ⅓ panelled at bottom and ⅔ glazed shutters with thick rolled glass at top including brass fittings, brass rim door locks with handles, brass hinges and hooks, brass screws etc., complete with two coats of slate colour silicate painting	,,	680
23	Inscription stones	Each	2
24	Paving with burnt stone slabs 3" to 4" thick all round the building for 3' width with cement pointing.	Sq.ft.	2,100
25	Clearing and levelling the ground and forming to the required level.	Lum	sum
26	For extra height of plinth to make up the longitudinal slope of the ground with 6' difference from one end to the other, or extra 3' average height in excess.	Lump	sum
	II. Ground Floor.		
1	Burnt size stone in lime mortar (in courses of about 8") mixed with 10 per cent cement with through bond stones 6' apart with neat clear joints and one line dressing one inch all round every stone for all unplastered surfaces	C.ft	25,482
2	Burnt stone slabs not less than 5" thick two line dressed for cills and lintels of doors and windows an exposed surface and one line dressing for bed joints.	S.ft.	1,334
3	Pointing stone masonry walls with white Portland cement including scraping the joints ¾" deep and nicely lined.	Sqr.	176·4
4	Chunam plastering over stone masonry with two coats, and rendered smooth.	,,	93·92
5	White washing, two coats	,,	93·92
6	Architrave moulding two line dressing all round the doors and openings of passages of Dome room 7" wide and 1" projection.	Rft.	168
7	Two line dressing of surface of wall for the frieze between pillars.	S.ft.	143
8	Rolled steel beams as per British standard specification including lifting and hoisting and with two coats of slate colour.	Cwt.	388·34
9	Boxing lintel girders with burnt brick in cement including boring holes in girders, distant pipes, bolts and nuts and plastering with wire net with cement mortar 1:4 with architrave moulding 3" deep and 1½" projection so as to present stone apperance.	C.ft.	134
10	Cut-stone arch work with necessary dressing, and with stepped Voussoirs as per drawing.	,,	443
11.	Two line dressed cut stone balustraded parapet wall 3' high with 12" x 9" base and coping, and 4" x 9" cast cement balustered 20" high 7" diameter spaced about 4' apart (1-2-4 ¾" aggregate) including cement pointing.	R.ft.	131
12	Cut stone balustraded parapet 3 ft. high with soiled stone wall 18" thick at back below openings of windows and with balusters 8" wide 4" apart having base and cornice as per design.	,,	30

Sl. No.	Items of work	Per	Quantity
13	Cut stone circular three line dressed columns in 7 blocks (or about 2'-6" lengths) the central one cut to shape to take the intermediate floor properly including caps and bases plastered with cement mortar (1:4) dia. at bottom of column being 2'—1" and at top 1'—11" including white cement pointing for shaft.	C.ft.	1,839
14	Partition with R. C. brick wall 4½" thick in cement mortar 1:4 and Exmet or wall reinforcement for every III course including plastering.	Sft.	665
15	Reinforced cement concrete 1:2:4 spandrel stairs with slabs 12" tread 6" rise 4½" wide and 2' into the wall with smooth non wearing top finish of corborendum or Ironite or lapidary floor hardner 1/2 for top ½".	„	487
16	Cast iron railings 3' high ornamental as per design including polished teakwood hand railing 4" x 3" with painting and fixing, etc., complete iron work from Bhadravati.	Rft.	70
17	Flooring with milk white glazed tiles on 3" concrete bed and pointing with cement and plaster of paris.	Sqr.	1·12
18	Roofing with reinforced solid or hollow bricks to carry a super load of 1½ cwt. per Sq. feet 7" thick 12¾" span jointed with cement mortar with 2" thick flooring in cement concrete 1:2½:5 finished at top with coloured Portland cement ¼" thick in patterns for borders for 1/3 of the whole area, and with smooth plaster for ceiling, with string course moulding as per design for front face of roof between pillars of verandah plastered to resemble granite.	„	97·50
19	Teak-wood door with 3" x 5" frames work 1½" thick shutters with 1/3" panelled at bottom and ⅜" glazed shutters with ¼" thick 3 coloured reinforced glass at top includingbrass fittings, *i.e.*, (one brass rim door lock with handles, 6 five inch brass hinges, 3 twelve inch tower bolts, and 2 six inch hooks with brass screws, etc., complete, including slate colour painting two coats with top ventilators attached to it above.	Sft.	845
20	Teakwood windows with 3" x 5" frame work 1¼" thick glazed shutters in four halves with ¼ thick rolled glass and rebates on both sides including iron bars ¾" dia. 4" apart brass hooks and rings and stoppages, etc., complete with two coats of slate colour paint with top ventilator as per design attached to it above.	S.ft	1,900
	III. First Floor.		
1	Burnt size stone in lime mortar in courses of about 6" with through bond stones 6' apart and with the exposed face of all stones dressed one line, on outside of wall or *i.e.*, for all unplastered surface with clean neat joints not exceeding ½" thick.	C.ft.	24,038
2	Burnt stone slabs not less than 5" thick with two line dressed or exposed faces and one line dressing for bed joints for sills and lintels of windows and doors.	S.ft.	2,645
3	Pointing masonry walls with white Portland cement including scraping the joints ¾" deep and nicely lined.	Sq.	162·73
4	Chunam plastering over stone masonry with two coats and rendered smooth.	„	101·29
5	White-washing two coats	„	101·29
6	Architrave moulding with two line dressing all round doors and openings of passages 7" wide.	R.ft.	360
7	Cut stone two line dressed architrave to enclose the steel lintel above columns where required as boxing all round the building 10½' above the floor level in three layers bottom layer 5" dressed slab 25" wide 1" projecting beyond the wall central layer with cut stone 9" thick 12" wide 1¾" projection beyond the wall and top layer with dressed slabs 4" thick 16" wide 3½" projection beyond the wall with cement	„	459

No.	Items of work	Per	Quantity
8	Three line dressing for circular discs of 1½′ dia. 1½″ projection beyond the frieze above columns with concave two line dressed moulding or champering all round perimeter.	Each	26
9	Cut stone cornice all round the building in three layers :— Bottom layer with cut stone 8″ thick 14″ wide 2″ projection at bottom and 6″ at top beyond frieze central layer with cut stone 8″ thick 26″ wide 14″ projection beyond frieze with throating about 2″ deep and top layer 5″ dressed slab 28″ wide 19″ projection beyond the frieze with cement pointing.	R.ft.	834
9(a)	Cut stone architrave above the openings of verandah only top layer 8″ thick cut stone, as per pattern under item No. 7.	R.ft.	227
(b)	Two line dressing for the frieze all round the building ...	S.ft.	1,544
10	R. S. beams as per B. S. S. including lifting, hoisting and with two coats of slate colour paint.	Cwt.	461·6
11	Boxing lintel girders with broken stone in cement (1 : 4) including boring holes in girders, distance pieces, bolts, nuts inside architrave stone work as in item No. 7 above	C.ft.	559
12	Partition wall with R. C. bricks 4½″ thick with cement mortar and cement as in plastering, etc., complete including shutter arrangements.	S.ft.	588
13	Flooring with milk white glazed tiles on 3″ concrete bed and pointing with cement and plaster of paris.	Sq.	1·08
14	Roofing 7″ thick laid to a cambre of 1 :40 for drainage with reinforced concrete and solid or hollow bricks with 1½ % reinforcement between or sufficient reinforcement to take a load of 1 cwt. and top covered with lime concrete about 3″ thick and 3″ courses of flat tiles, the central one being laid in cement mortar 1:5 and with top of roof and ceiling being finished with smooth lime plaster.	,,	101·42
15	Cement concrete 1:2 :4 perforated ventilators as per design with string or 18″ gauge wire gauge in perforations.	S. ft.	567
16	Burnt size stone parapet 1½′ thick including blocking course 3½′ high thickness of blocking course being 1¾ feet including weep holes 2″ x 6″ at 8″ apart with two lines dressing for the front face and top including cement pointing and coping out to shape as per design 3″ x 3″ in places shown in drawing.	R.ft.	686
17	Cut stone pediment ornamental corners of pediment as per design.	Each	18
18	Cut stone vases as per design over the pedestal of parapet three line dressed.	,,	14
19	Cast iron railings 3′ high ornamental as per design, including teakwood hand railings 4½″ x 3″ with pointing and fixing, etc., complete from Bhadravati Iron Works.	R.ft.	162
20	Teakwood doors with 3″ x 5″ frame work 1½″ thick shutters 1/3 panelled and ⅔ glazed with ¼″ thick reinforced or unbreakable glass at top including brass fittings, brass rim doors, locks with handles, brass hinges, hooks, brass screws, etc., complete, including two coats of slate colour painting, etc.	S.ft.	618
21	Teakwood windows with 3″ x 5″ frame work 1¼″ thick shutters glazed in (4) halves with ¼″ thick rolled glass and rebated on both sides, including iron bars ¾″ dia. 4″ apart, brass hooks, rings, stoppages, etc., complete with two coats of slate colour paint.	,,	1,470

IV. ABSTRACT FOR "DOMES ABOVE FIRST FLOOR."

1	Corner domes	C.ft.	13,852
2	Central dome, 1st stage (33′ above roof)	,,	25,544
3	Do IInd stage (octagonal portion) ...	,,	7,291
4	Do IIIrd stage (spherical portion)	,,	5,539

A. TANDONI RAO,